EXECUTIVE OFFICE OF THE PRESIDENT

OFFICE FOR EMERGENCY MANAGEMENT

OFFICE MEMORANDUM

To: Robert Collyer

Date: August 5, 1941

From: Arnold Barach

Subject: Substitutions for consumer goods

Can we tie in a Govt agency
Natl Rsch Council?
Bu. Home Economics

TIN: 1. Most common use for tin is tin plate, from which are made tin cans. One substitute is the "tinless can" which does away with tin altogether, using only steel coated with a special kind of laquer. This has been found practical for certain non-acid foods.

Cutting down on the amount of tin in a tin can has already been put into effect. OPM requested a 10 percent reduction, and some experts estimate that there would be no harm in cutting the tin coating in half.

Coatings such as laquer are not permanent and in time may peel off and mix with the contents of the can. It is possible, therefore, that consumers may find "dated" tin cans on their store shelves, warning them against purchase of the product after a given period.

Silver coatings on can interiors in place of tin has been suggested but the cost might be prohibitive. But if used on "returnables" (the way milk bottles are returned each day) the plan might be feasible.

Consumers will probably find more and more food previously put in cans packed in glass containers. Likewise, waxed paper or other types of paper containers will be used as substitutes, and experiments are now going forward for increased use of these. The glass containers, in many instances, will be dark colored to preserve the vitamin content of the foods against deteriorating effect of light.

Plastics could be used for food containers, but so far, this is still in the experimental stage.

Frozen foods will come more and more into use if a tin shortage developes, and consumers may find themselves using frozen peas instead of canned ones, frozen fruits, other frozen vegetables, frozen meat products, etc.

2. Tin is a big item in tubes for shaving cream, tooth paste, cold cream, etc. One substitution might be increased use of shaving sticks in place of cream (or other forms of shaving soaps), another; tooth powder instead of tooth paste, another; cold cream in jars instead of in tubes.

Lead has been found to be a good substitute, and plastic tubes have been found feasible. This type of substitution could save about 1000 tons of tin a year. 1

3. Tin foil is on its way out. In its place will be used cellophane, waxed paper, transparent plastics, etc. Consumers will find these things being used more and more on such things as packaged cheese, candy bars, chewing gum, tea, linings for bottle caps, etc.

4. Pewter will probably disappear from the store shelves as a luxury product using a large amount of tin.

5. One suggestion has been to use silver in place of tin in soldering work.

ALUMINUM: 1. Enamelware, steel, iron, glass, pottery and even plastics will take over the job of aluminum in the kitchen. Some of these are already in use, but the aluminum shortage will make their use much more common.

2. Aluminum foil, used for purposes similar to those for tin foil, will be replaced by oiled paper, glassine, leadfoil, or cellophane.

3. Aluminum bottle caps, for milk, beer, pop, etc., will have to be replaced with some sort of sheet steel, or possibly plastics or paper (in case of non-effervescent products).

4. Other aluminum substitutes include steel in ice cube trays, plastics for washing machine agitators, cadmium-plated steel for refrigerator interior fronts, molded plastic for vacuum cleaner domes, plastics for camera cases, cast iron for gas range burners, enameled steel for eyelets on athletic shoes, plastic covered steel on fishing rod handles and reels, ~~ixxxxfxxxxx~~ enamel steel for electric range cookers, painted steel for refrigerator cabinets, ~~xxxxx~~ plastics in handles, decorations, covers, etc.

too much steel!

5. Aluminum store fronts, lobby effects in apartment buildings, etc. will probably disappear for the duration. In their place may be plastics or glass.

CORK: Look underneath a soda pop cap and you~~xx~~ will find cork, used to keep the container airtight. With a cork shortage developing scientists are now looking for a substitute. Most likely substitute will be rubber? derivatives or plastics. In any case, the ordinary "cork" still used for capping medicine bottles, etc. will probably disappear for the duration.

STEEL: 1 Shortages in certain types of steel have developed. One of these is used in the common zipper. Best substitute thus far available for zippers is the hard plastic, and it may be consumers will be zipping plastics instead of steel. At a recent meeting of automotive engineers, substitutes ~~xx~~ for steel in automobile manufacture ~~xxxx~~ were discussed. One engineer foresaw automobile bodies of plastics in place of sheet steel, and said such cars would be lighter, cheaper to operate, quieter, more comfortable. This is one example of how substitutes developed because of emergency situation may prove even better than product substituted for and become a permanent "substitute."

had 'em already (Ford?)

2. Other steel substitutes include wood for ~~croquet set racks~~ ~~and~~ kitchen cabinets, asbestos for galvanized steel sheets (used in construction work), and plastics for any number of small household items now made of steel.

ZINC: Pressed steel may replace zinc in such ax common household item as a clothesk line pulley. Porcelain may replace galvanized range boilers. Glass will be used in kerosene range tanks and oven linings. Ordinary thimbles now made of zinc may be replaced with a cadmium finish material. ~~Gix~~ Galvanized fencing and wire may be ~~xxxxxxxxx~~ entirely replaced with painted wire.

LEATHER: Fiber may replace leather in athletic shoes midsoles, football helmets, and shouldter pads.

NICKEL:1.Nickle has been cut by three-quarters in chrome plate, beigg replaced by copper (which also has become a "short" material, indicating that possibly chrome will disappear altogether as a trim, being replaced by either baked enamel finish or plastics).

2. On bicycle lights, horns, sirens, enameled steel is being used in place of nickel. Plastics have replaced trim on ranges and heaters, while chrome steel without any nickel at all is used in stainless steel table cutlery. "White metal" has replaced nickel in clarinets, which might make a difference to Benny Goodman.

BRASS:1.The common brassx ashtray is being replaced by glass and plastic substitutes so that there may be enough brass for shell casings.

2. Other brass substitutes already made available are steel in wall brackets and football and basketball inflators; plastics in boat whistles; cast iron in bicycle locks; and malleable iron in boat secorations.

WOOD: Bakelite and other plastics may be used in place of furniture woods for which become scarce.

normal	V-mat.
tin	silver, coated paper, glass (frozen foods, shaving sticks tooth powder), jars, lead & lead-foil
tin foil –	cellophane, waxed paper, transparent plastics
aluminum –	enamelware, iron, glass, pottery plastics (washing machines, vacuum cleaners, camera cases, handles, decorations, covers)

plastic zippers not for powder bags

Ford plastic body, rear-end wi hammer

pick out best 6 & visualize

Where can it be shot? 175-200 ft.

Denton!

Pop Sc

Jo I

II

Haferburg (Bennett)
note on Miller to
reels & trade papers
~~[illegible]~~gs

V-mats- party in kitchen?
16 mm of Goodrich rubber conserv.

glass "straws" - show old mats subbed by
V's.

Glass or Ascap

Subs. etc. based on Mar. 15 F.D.R. aam

aug.
~~Flyg & Pop Ar~~
Flyg & Pop. Ar.
Mags (Nelson)
aviation aug.
25 yrs.

~~Harry Glass~~

waste paper campaign

2294
open

v-materials
collyer

~~Suggestions for Popular Science story on V-materials (substitutions).~~

~~The whole story might be done with one set - such as the ultra-modern kitchen which was illustrated in "Life" for August 4, 1941, on pp. 18-9.~~

~~Action could represent people in dinner clothes staging a party in the kitchen, giving an opportunity for dramatic or comic action during the exposition which revolves around the fact that we must substitute many common materials now in use for others, new and old, because the national emergency so requires.~~

Starting on the left of the ~~"Life"~~ picture, an oilcloth apron (instead of rubber) can be donned by a ~~female~~ hostess who reaches for a glass cocktail shaker above the refrigerator which yields ice from plastic trays, or trays made from some other V-material.

This process can continue across the kitchen with a metal-handled glass frying-pan used to beat up a light supper.

One difficulty: I cannot see girls in evening dress wearing cotton stockings - even those fancy designs turned out by the U.S. Bureau of Home Economics.

Note: The Bureau of Home Economics, incidentally, has been experimenting along this line and has many of these materials available if they cannot be procured from regular stores in Hollywood or Los Angeles. If, furthermore, a Government angle is desired as the springboard, activities or merely the exterior of the Bureau's laboratories at the ~~Bel~~ Beltsville, Md., Experimental Farm can be photographed. This lab is in a nice-looking brick building a few miles out of Washington, D.C.

~~Information is now being sought on a plastic automobile~~ which

Ford is reported to have ready for sale. It is said that the plastic rear end of this car can be whacked with a big hammer without damage. If the car exists, party could drive up to the house in it.

Following is a list of "normal" materials with their substitutes:

Normal	V-material
tin	silver, coated paper, glass, frozen foods, shaving sticks (instead of tubes) tooth powder, jars, lead and lead-foil.
tinfoil	cellophane, waxed paper, transparent plastics
aluminum	enamelware, iron, glass, pottery, plastics (washing-machines, vacuum cleaners, camera cases, handles, decorations, covers).
steel	a plastic zipper report is being investigated.

McB: see me for add: Show military need of normal materials in a montage: steel, copper for shells; aluminum for planes, etc.

~~Tires~~ Tire-waste, driving (used by other reels, might be illustrated.